미생물담체의 바이오필터 운전조건 하에서의 흡착특성

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Freundlich isothermal adsorption parameters, applicable to such biofilter-model as process-lumping model(Lim's model), for sterilized granular activated carbon(GAC), sterilized compost and sterilized equal volume mixture of GAC and compost were obtained and were compared each other. Adsorption capacity parameters(K) and adsorption exponents of Freundlich adsorption isotherm equation, which simulates the adsorbed amount of ethanol equilibrated with the ethanol concentration of the condensed water in the pore of the media, were constructed for sterilized granular activated carbon(GAC), sterilized compost and sterilized equal volume mixture of GAC and compost as (0.7566 and 5.070×10^{-7}), (0.8827 and 1.000×10^{-8}) and (0.5688 and 5.243×10^{-6}), respectively. These Freundlich isothermal adsorption parameters were applicable to the adsorption characteristics of biofilter media enclosed with bio-layer. The order of magnitude of the ratio of ethanol-air/water partition coefficient and toluene-air/water partition coefficient was almost consistent to that of ethanol-adsorbed amounts in this experiment with compost and in the investigation of Delhomenie et al. on toluene-adsorption to wet compost.